2008 Southern S&PF Redesign Competitive Process Proposal

Applicant (Agency) Contact Information

State	North Carolina		
State Forester	Wib Owen		
Address	North Carolina Division of Forest Resources 1616 Mail Service Center Raleigh, NC 27699-1616		
Phone	919-733-2162 x202	E-Mail	Wib.Owen@ncmail.net

Project Information

Project Name	**Digital Aerial Sketch-Mapping Technology**				
Project Lead	Robert Trickel	Phone	919-733-2162, x256	E-Mail	Rob.Trickel@ncmail.net

Abstract of Project Proposal

The US Forest Service Forest Health Technology Enterprise Team has developed the capability to aerially sketch-map forest pest concerns using a computer and Global Position System (GPS) technology, and digital base maps. Locations of pest outbreaks are sketched into a computer sketch-mapper to be later retrieved, displayed and archived in a Geographic Information System (GIS) format. This technology was developed for, and has proven successful in, mapping forest health concerns. The potential exists to use this technology to effectively and efficiently detect and document activities and aerial observations related to forest management, water quality, fire control, emergency management, and law enforcement. In fact, the potential for this technology within the Division of Forest Resources is presently unlimited.

The North Carolina Division of Forest Resources is requesting $60,000 to purchase five (5) state of the art digital aerial sketch-mapping units, including all hardware and software according to FHTET specifications. Training in the use of this technology will be conducted for select individuals to not only use the product, but also to train other potential users.

Development of standards and operating procedures will be an important step in the implementation of this project. Division staff foresters will work with USFS, NC Center for Geographic Information and Analysis, and NC Geodetic Survey and others to develop statewide standards. Experience and standards will be shared with other interested state forestry agencies, and map products will be shared with state and federal agencies as appropriate.

Partnering Agencies and Groups/Organizations	Division of Forest Resources: Forest Management Section (Forest Management, Urban Forestry, Water Quality, Stewardship branches), Forest Protection (Fire Control, Pest Control, Aviation, Law Enforcement Branches), District and Regional Staff. NC Emergency Management. North Carolina Center for Geographic Information and Analysis (NCCGIA). North Carolina Geodetic Survey (NCGS). USFS - Forest Health Technology Enterprise Team, Region 8 Asheville Field Office
Project Location	Statewide
Expected Completion Quarter	Purchase of equipment - Q3 2008 Training and Implementation (Water Quality, Fire, Pest Control, Aviation, Regional Staff) - Q2 2009 Training and Implementation (all others) - Q2 2010
Total Federal Funding Request	$60,000
Total Proposal Budget (including match)	**Project Income Sources**

	Organization*	Grant	DFR Match	Match	Match	**Total**
	Dollars	$60,000				$60,000
	Donations					
	In Kind Services		$60,000			$60,000
	Total	$60,000	$60,000			$120,000

Project Name	**Digital Aerial Sketch-Mapping Technology**

Explanation of project

The US Forest Service Forest Health Technology Enterprise Team has developed the capability to sketch-map forest pest concerns using a computer and Global Position System (GPS) technology, and digital base maps. Locations of pest outbreaks are sketched into a computer sketch-mapper to be later retrieved, displayed and archived in a Geographic Information System (GIS) format. The potential exists to use this technology to effectively and efficiently detect and document activities and aerial observations in the areas of forest management, water quality, fire control, emergency management and law enforcement. In fact, the potential for this technology within the Division of Forest Resources is almost unlimited.

The North Carolina Division of Forest Resources is requesting $60,000.00 to purchase five (5) state of the art digital aerial sketch-mapping units, including all hardware and software according to FHTET specifications. Training in the use of this technology will be conducted for select individuals to not only use the product, but also to train other potential users.

Development of standards and operating procedures will be an important step in the implementation of this project. Division staff foresters will work with USDA Forest Service, NCCGIA and NCGS and others to develop statewide standards. Experience and standards will be shared with other interested state forestry agencies, and map products will be shared with state and federal agencies as appropriate.

Specifically these units will be used for:

- Community Wildfire Protection Plans
- Firewise Community Planning
- Southern Pine Beetle Locations
- Forest Stewardship Planning
- Urban Forestry and Community Development Planning
- Forest Legacy Tract Mapping
- Insect and Disease Monitoring
- Non-native Invasive Species Surveys and Monitoring
- Water Quality Monitoring Sites
- Wildfire and Emergency Management Extent and Impact
- Forest Storm Damage Assessments (urban and rural)
- Providing datasets applicable to . . .
    - Southern Risk Assessment
    - Southern Forest Lands Assessment
    - other regional as well as state assessments
    - Geographic Information Systems data sets.

Project Name	**Digital Aerial Sketch-Mapping Technology**

Evaluation Criteria Discussion:

1. National and Regional Relevance (check all that apply)

- √ Fractured Forests
- √ Wildland Fire and Forest Fuels
- √ Changing Markets
- √ Forest Health
- √ Water Quality and Quantity

2. Prioritization

This project is a high priority for DFR. It is ranked #9 out of the 24 proposals prepared. The technology used in this project is state of the art with limitless potential for use in providing datasets applicable to the Southern Risk Assessment, Southern Forest Lands Assessment and other regional as well as state assessments and data sets.

3. Meaningful Scale

This project will reach across geographic and program boundaries within the state. It is anticipated that one unit will be housed in each of the Division's three district offices, one with Forest Management staff and one with Forest Protection staff. This is mainly for convenience, but during times of need such as fires, natural disasters, pest and non-native invasive surveys, and water quality surveys, units will be transferred to other areas as needed.

4. Collaboration

The Division of Forest Resources will seek training and guidance from various users within the US Forest Service. Coordination with NC Center for Geographic Information and Analysis and NC Geodetic Survey will be important to ensure that statewide standards for data collection and data sharing are met. Units may also be shared with other agencies within the state (Parks, Wildlife, Natural Heritage, Department of Agriculture) and other states' forestry agencies with guidance from Division personnel. The US Forest Service may also use these units for surveys during times of need.

5. Outcomes

Project outcomes are on multiple levels. First, purchase of the units and training the trainers will be important. The next level would involve training for staff and field personnel. Finally, implementation of the full project would take place using digital aerial sketch-mappers to document on the ground observations. The real results will be the collection, retrieval, display and archiving of unprecedented GIS layers that will aid in the management and documentation of fires, storm events, forest and water resources, and forest health issues.

6. Technology

This project is the ultimate example of incorporating geospatial technology in design, reporting, monitoring and/or communication. The technology used in this project is state of the art with limitless potential for use in providing datasets applicable to the Southern Risk Assessment, Southern Forest Lands Assessment and other regional as well as state assessments and GIS data sets.

7. Integrated Delivery

Many layers of data collected using this technology will be available for use by forest and resource managers from federal, state and local governments, non-government organizations, industry and individuals. Data collection standards will meet both state and federal guidelines to ensure usability at varying levels.

8. Leverage

The Division will use federal funds to purchase hardware and software for this project. Travel, training and implementation time and expenses will be used as in-kind match. Whenever possible, training will be conducted in conjunction with other training opportunities involving GPS, GIS and other computer technology to make best use of time and travel, and to improve the overall understanding of the technology and its uses. Scheduling of flights for training and implementation will be done in a way where multiple objectives can be met.

9. Influence Positive Change

Technology purchase, training and initial implementation will only be the beginning. As users see the benefits of data collection and utilization, new ideas for dataset collection and delivery will emerge. In fact, the demand for use of this technology should drive the need to acquire additional equipment and expertise in the next 3-5 years.

10. Timeliness

Upon receiving funding, purchase of equipment will begin immediately. Training and full implementation will be well underway within 2 years.